Analysis of the Ethical Effects of Unmanned Aerial Vehicles in Modern Combat

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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<u>Introduction</u>

Unmanned Aerial Vehicles (UAVs), also known as drones, have become an increasingly popular weapon in modern warfare. Their use has generated a significant ethical debate regarding their legality, effectiveness, and the morality of using them. UAVs utilization in combat began in the early 2000s during the War on Terror, and their popularity has since grown due to their ability to carry out targeted killings with great precision, minimizing civilian casualties. However, their use has also been controversial because they allow operators to conduct warfare remotely, reducing the risk to military personnel but also potentially desensitizing them to the realities of war.

One of the main ethical debates surrounding UAVs is their legality. Some argue that their use is illegal because they violate the principles of international humanitarian law, which requires combatants to distinguish between civilians and combatants, and to minimize harm to civilians (Roff, H. M. 2014). Others argue that UAVs are legal because they are simply a new form of technology that does not violate existing laws because there are no laws specifically prohibiting their use (Walsh, J. I. 2015).

Another ethical concern is the psychological impact of using UAVs on both operators and the communities they operate in. Operators can suffer from mental health issues such as post-traumatic stress disorder (PTSD) and burnout due to the high-stress nature of their work, while civilians living in areas where UAVs are used can experience fear, trauma, and even physical harm. (Chappelle, Reardon, Thompson, Goodman. 2014)

The ethical debate surrounding the use of UAVs in combat is complex and multifaceted. While their precision and ability to reduce civilian casualties are beneficial, their remote

operation and potential psychological impact are significant concerns. As such, it is important to continue to carefully evaluate their use and consider the potential consequences before deploying them in warfare.

The purpose of this paper is to explore the use of unmanned aerial vehicles (UAVs) in modern conflicts from the perspective of the Actor-Network Theory (ANT). The military use of UAVs has raised several ethical dilemmas that I aim to identify, analyze, and evaluate. In particular, I identify the relevant groups involved in the use of UAVs and their impact on government, operators, and the general population.

In the first section, I explain the methodology used for the research, which explains the research methods used to gather and analyze data. Specifically, the methodology section explains the literature review process and the defense of methods used to select sources and collect data. I then provide a brief history of the design and development of UAVs and their increasing importance in modern conflicts. This includes a summary of the ethical dilemmas that have arisen from their use, which serves as a backdrop for the rest of the paper. I then proceed to explain the basics of Actor-Network Theory (ANT) and how it is useful for analyzing the complex relationships and interactions between the actors involved in the use of UAVs.

In the results section, I summarize the key findings of the analysis, including the implications for each of the relevant groups involved in the use of UAVs. The results section will also suggest possible future problems and research needed. Finally, the conclusion summarizes the implications of the findings and the overall impact of UAVs on modern warfare. We end with recommendations for further research and potential solutions to mitigate the ethical dilemmas

associated with the use of UAVs in modern conflicts. Overall, this paper aims to provide a comprehensive analysis of the use of UAVs in modern conflicts from an ANT perspective, to identify and evaluate the ethical dilemmas raised by their use, and to propose possible solutions for mitigating these dilemmas.

Methods

In this research I use a combination of literature review and the Actor-Network Theory (ANT) framework. I will explain more about this specific framework in the next section. The literature review examines existing research on the topic of unmanned aerial vehicles (UAVs) and their ethical implications. This helps to provide a comprehensive understanding of the subject matter and informs the subsequent analysis.

To begin the analysis, I first identified the various actors involved in the development and use of UAVs, including military personnel, government agencies, defense contractors, and civilian populations affected by the technology. I also considered Non-human actors, such as the UAVs themselves and the technology used to control and operate them. Then I examined the relationships between these actors, including the roles that different actors play in the development, deployment, and use of the technology, as well as how they interact with one another.

I collected data for this analysis from a range of sources, including academic journals, government reports, and news articles. The literature review helped to identify key issues and

themes related to UAVs and their ethical implications, while the ANT framework allowed for a more detailed examination of the actors and their relationships.

The research methods used in this paper are sound and appropriate for the research question at hand. The literature review provides a comprehensive understanding of the existing research on the topic, while the ANT framework allows for a detailed analysis of the actors involved in the development and use of UAVs. By combining these two methods, the paper provides a well-rounded analysis of the ethical implications of UAV technology.

STS Framework

Actor-Network Theory (ANT) is a sociological framework that recognizes the complex network of actors, both human and non-human, and their interactions (Bencherki, Nicolas. 2017). ANT has proven useful in analyzing the ethical implications of unmanned aerial vehicles (UAVs) in combat. In analyzing the development, deployment, and use of UAVs, the ANT framework takes into account the various actors involved, including engineers, manufacturers, policymakers, military personnel, and the drones themselves. It also considers how these actors interact with one another, how they shape each other's actions and decisions, and how they are affected by the deployment of the technology.

One way I used ANT in the ethical analysis of UAVs is examining the power dynamics involved in the deployment of these technologies. For example, policymakers and military personnel may have a significant influence on how drones are used and the ethical considerations

that are taken into account. However, the engineers and manufacturers also have a significant influence on the design and capabilities of the drones, which can impact their ethical implications. Moreover, the ANT framework can also be used to analyze the impact of UAVs on various actors and the broader social context. For instance, UAVs can have significant psychological effects on operators and civilians. The use of UAVs can also affect public perceptions of war and the legitimacy of military actions.

To begin the analysis, I identified the various actors involved in the development and use of UAVs, including military personnel, government agencies, defense contractors, and civilian populations affected by the technology. Non-human actors, such as the UAVs themselves and the technology used to control and operate them, were also considered. I then examined the relationships between these actors, including the roles that different actors play in the development, deployment, and use of the technology, as well as how they interact with one another.

Background

Unmanned Aerial Vehicles (UAVs), commonly known as drones, are remote-controlled aerial machines that can operate without a human pilot on board. UAVs have been used for various purposes, including civilian applications such as mapping and delivery, as well as military uses such as reconnaissance and ground strike missions. The use of UAVs in military operations has increased rapidly since the turn of the century, primarily due to their unique capabilities, including their ability to fly for extended periods of time, remain on station, and

conduct missions without risking pilots' lives in dangerous warzones. UAVs are also able to operate in difficult conditions, such as high altitudes and hazardous weather, where manned aircraft would not be safe or practical. Additionally, their relatively small size and quiet operation make them difficult to detect, which allows them to conduct covert operations and observe enemy movements without being detected.

One of the most significant modern military applications of UAVs is in the targeted killing of suspected terrorists, insurgents, and enemy combatants. Since the first recorded targeted killing using a UAV in Yemen in 2002, the US military and intelligence agencies have conducted hundreds of such operations in multiple countries, primarily in the Middle East and Africa. This use of UAVs has proven highly controversial, with critics raising concerns about its legality, effectiveness, and potential to cause civilian casualties. UAV strike missions have also garnered criticism for removing the human decision factor when picking which targets will be fired upon and when.

The use of UAVs in military operations has the potential to increase efficiency and effectiveness while reducing risk to human operators. However, it also raises significant ethical concerns, particularly with regards to the potential for collateral damage and civilian casualties. Studies have shown that the use of UAVs can increase the risk of civilian casualties in certain situations. For example, a study by the Bureau of Investigative Journalism found that between 2004 and 2019, U.S. drone strikes in Pakistan, Somalia, and Yemen resulted in the deaths of between 8,858 and 16,901 people, including between 1,720 and 3,408 civilians (BIJ, 2020).

Another study by the United Nations found that the use of UAVs in Afghanistan had resulted in a significant increase in civilian casualties.

In addition to the risk of collateral damage, the use of UAVs also raises concerns about accountability and transparency. Unlike traditional military operations where the actions of soldiers are subject to scrutiny and accountability, the use of UAVs can make it difficult to identify who is responsible for any errors or wrongdoing. As a result, there is a risk that the use of UAVs can lead to a lack of accountability and transparency, which can have broader implications for public trust and support of military operations.

To address these concerns, there have been calls for greater transparency and accountability in the use of UAVs. In a report by the Open Society Foundations, the authors argue that governments should provide greater transparency in the use of UAVs, including publicly disclosing the legal and policy frameworks governing their use, as well as the procedures used to assess and mitigate civilian casualties. The authors also call for greater oversight and accountability mechanisms to ensure that the use of UAVs is consistent with international law and human rights norms. While the use of UAVs in military operations can provide significant benefits, it also raises significant ethical concerns. It is important for policymakers to address these concerns through greater transparency, accountability, and oversight to ensure that the use of UAVs is consistent with international law and human rights norms.

Despite the advantages and strategic benefits of UAVs, their use has also led to a range of ethical dilemmas and controversies. One of the main concerns about UAVs is the potential for collateral damage and civilian casualties. UAV strikes have been criticized for causing significant

civilian casualties, and for their psychological impact on the civilian population in areas affected by drone strikes. The use of UAVs has also raised concerns about accountability, as operators can be removed from the physical battlefield and not directly experience the consequences of their actions.

In addition, UAVs have led to debates about the legal and ethical implications of autonomous weapons systems. The development of increasingly sophisticated AI systems means that it is becoming more feasible to deploy unmanned systems that can operate autonomously, without human intervention. The use of autonomous weapons systems raises concerns about the potential for accidental harm, the ability to make ethical judgments, and the potential for removing human responsibility from the decision-making process.

Results

The results of this analysis shed light on the complex actor-network that exists around the use of UAVs. First, it was found that the network involves a range of actors with differing interests, including the military, government, operators, and the general public. Each of these actors has a unique perspective on the use of UAVs, and their interactions and relationships have significant implications for the deployment and use of UAVs.

One of the key findings of this study is the importance of network ties between the different actors. For example, the military has close ties with government and operators, which allows them to deploy UAVs in a variety of contexts. Additionally, the public has limited ties to other actors, which may lead to concerns about privacy and security issues related to UAVs.

Another important finding is the ethical dilemmas caused by the use of UAVs. For example, the use of UAVs in modern conflicts has raised questions about the legality and morality of remote killing. In addition, there are concerns about the accuracy of UAVs, with some studies suggesting that they may be less accurate than piloted aircraft (Barela & Plaw, 2016).

Moreover, the analysis reveals that the historical impact of UAV use has been significant. The use of UAVs has revolutionized modern warfare, allowing for increased surveillance and targeted strikes. However, the use of UAVs has also had significant impacts on operators, including increased rates of mental health issues and PTSD (Chappelle, Reardon, Thompson, & Goodman, 2014). It has also raised concerns among the general population about the ethics of remote warfare.

Overall, the results of this study highlight the complex and multifaceted nature of the actor-network surrounding the use of UAVs. The network involves a range of actors with differing interests and perspectives, and their interactions have significant implications for the deployment and use of UAVs. The ethical dilemmas caused by the use of UAVs have led to concerns about the legality and morality of remote killing. In addition, the historical impact of UAV use has been significant, with both positive and negative effects on operators and the general population. These findings have important implications for policymakers and researchers, as they underscore the need for continued investigation and critical analysis of the use of UAVs.

Implications

The use of unmanned aerial vehicles (UAVs) in military operations has significant implications for various actors involved in the network. UAVs can provide the government and military with greater control over conflicts, but at the same time, it also raises issues of accountability and ethical considerations. One of the key implications of the use of UAVs is the potential for emotional detachment among the operators. The distance between the operator and the target can create a sense of detachment, which may lead to a lack of empathy and moral responsibility for the actions taken. As a result, operators may be more likely to engage in risky or unethical behavior, which can have significant consequences for both themselves and those around them.

From another perspective, based on the PTSD studies in the drone operators. I can argue that operators are less likely to engage in unethical behaviors while flying UAVS. This comes from the fact that while they are free to take more risks as they are not putting themselves in harm's way, they do feel a responsibility for their actions. Based on the background research in this topic it seems to me that the UAV operators are even more aware of the killing and destruction that is caused as a direct result of their actions because they cannot put the ethical implications aside as a "kill or be killed" situation.

Future research could focus on improving the training of UAV operators to address the emotional detachment issue. This may involve the development of new training programs that aim to increase empathy and moral responsibility among operators. Additionally, research could

explore the use of virtual reality simulations as a means of training UAV operators to better understand the impact of their actions. Another implication of the use of UAVs is the potential impact on civilian populations. UAVs can provide military forces with greater precision and accuracy, but at the same time, they can also increase the risk of collateral damage and civilian casualties. This can lead to negative perceptions of UAVs among the civilian population, which can have broader implications for public support of military operations.

To address this issue, future research could explore how the public perceives UAVs and their impact on civilian populations. This may involve the use of surveys or focus groups to better understand public perceptions and attitudes towards UAVs. Additionally, research could explore the use of UAVs in non-combat situations, such as disaster relief or search and rescue operations, to help shift public perceptions of UAVs from solely being used for military purposes.

It is important for future research to focus on developing ethical guidelines for the use of UAVs and improving the training of UAV operators to address the emotional detachment issue. Additionally, research could explore how the public perceives UAVs and their impact on civilian populations to help ensure the responsible and ethical use of these technologies in the future.

<u>Conclusion</u>

STS is a useful tool for understanding the complex network of actors involved in the use of UAVs and the ethical implications of their use. My analysis of the UAV actor-network revealed several findings and implications for various actors. Future research should focus on developing ethical guidelines and improving the training of UAV operators to address these ethical concerns. The use of UAVs has significant implications for civilian populations, and more research is needed to understand how they perceive UAVs and their impact on their lives.

It is my belief based on my research that UAV usage is, as all ethical dilemmas are, not plainly black and white. The question of whether or not UAV deployment is ethical in combat situations does not have a yes or no answer. It depends on the exact situation. It seems to me that based on the many factors laid forth previously that in general the use of UAVs does save lives, especially of the pilots that would otherwise fly dangerous missions. That being said, there are most certainly situations where UAVs have a much higher chance of being misused than conventional weapons and tactics. It is very unlikely that UAV usage in combat will decrease and it is already increasing in volume in theaters like Ukraine. This is simply due to the amount of money and time that has already been spent on developing unmanned technology. UAVs have proved they are a less risky way for governments to operate in dangerous environments. There are obvious downsides that both the people of a country and their military operators can see but I believe that the leaders in charge of the deployment of these technologies will continue to do so as they deem the benefits outweighing the legal and ethical costs.

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